

Patent Claims:

1 – 10 (canceled)

11. (new) A method for regulating the filling of an internal combustion engine, comprising:

supplying a combustion air mass flow to a combustion chamber;

arranging a first and second actuator, that are controlled with respect to their position, in the flow path of the combustion air mass flow, the second actuator being arranged downstream of the first actuator and the first and second actuators having an upper limit position that is open and a lower limit position that is closed;

detecting an actual rotational speed of the internal combustion engine; and

predefining a setpoint intake pipe pressure for controlling the first actuator,

wherein as long as the second actuator is not in the lower limit position the setpoint intake pipe pressure is determined by a rotational speed-dependent characteristic map where the setpoint air mass flow is not an input parameter, and if the second actuator has reached the upper limit position for the current setpoint air mass flow, the setpoint intake pipe pressure is limited to an intake pipe pressure minimum value.

12. (new) The method as claimed in claim 11, wherein the upper limit position is open to the maximum and the lower limit position is closed to the maximum.

13. (new) The method as claimed in claim 11, wherein an invertible numeric mass flow model is used for calculating the intake pipe pressure minimum value and the position of the upper limit position of the second actuator and the setpoint air mass flow are input parameters.

14. (new) The method as claimed in claim 11, wherein a setpoint intake pipe pressure that is dependent on the setpoint air mass flow is used when the second actuator is sitting in the lower limit position.

15. (new) The method as claimed in claim 14, wherein the setpoint intake pipe pressure is determined using the mass flow model where the position of the second actuator in the lower limit position and the setpoint air mass flow are input parameters.

16. (new) The method as claimed in claim 11, wherein to control the second actuator an inversion of the numeric mass flow model is used that determines a setpoint position of the second actuator from the setpoint air mass flow and an actual intake pipe pressure.

17. (new) The method as claimed in claim 11, wherein to control the first actuator a model is used that determines a setpoint position of the first actuator from the setpoint air mass flow and the setpoint intake pipe pressure.

18. (new) The method as claimed claim 11, wherein the mass flow model has a monotonic characteristic curve that links the position of the second actuator with the air mass flow and the intake pipe pressure.

19. (new) The method as claimed in claim 11, wherein the first actuator is actuated in order to regulate the setpoint air mass flow when the second actuator is set in the lower limit position.

20. (new) The method as claimed in claim 11, wherein a throttle plate located in an intake tract is used as the first actuator and inlet valves with variable travel adjustment are used as the second actuator.

21. (new) The method as claimed in claim 11, wherein the setpoint air mass flow is derived from a driver request signal.